Description
This instrument must be used with the eoProbe sensors and a dedicated software. It operates up to 3 eoProbe directly connected. It converts the optical signal transmitted by the eoProbe into an electrical signal that can be analysed with an instrument like an oscilloscope, a spectrum analyser or any other signal processing instrument. It includes an antenna factor (AF) real-time treatment for measuring absolute electric fields (modulus, phase). Each eoSense is delivered with a calibration certification valid for 2 years.

Main usage precautions
The instrument must not be submitted to mechanical constraints or shocks. The eoSense must be handle with care.

Applications
E-field measurement in/for:
- Biological environment
- Specific Absorption Rate assessment
- Medium and high voltage systems
- Cold plasmas
- MRI
- Power electronics systems
- Railways
- Any liquid
- Antennas
- And many more

Main features
- Up to 3 eoProbe channels
- Very easy instrument to operate
- Real-time antenna factor correction with exportation of data on a CSV file format
- Integrates a Laser lock key and an interlock to switch off Laser
- Operated by a dedicated software delivered with the instrument

eoSense versions*

<table>
<thead>
<tr>
<th>Reference</th>
<th>Environment</th>
<th>Option AMP¹</th>
<th>Accessory eoAcq²</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF-30S</td>
<td>40Hz...30MHz</td>
<td>-</td>
<td>30Hz...100MHz</td>
</tr>
<tr>
<td>MF-01U</td>
<td>1kHz...1GHz</td>
<td>1kHz...1GHz</td>
<td>50dB gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1kHz...1GHz</td>
<td>-</td>
</tr>
<tr>
<td>HF-10</td>
<td>100MHz...10GHz</td>
<td>100MHz...10GHz</td>
<td>55dB gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10kHz...10GHz</td>
<td>30dB gain</td>
</tr>
<tr>
<td>HF-10V</td>
<td>10kHz...20GHz</td>
<td>100MHz...20GHz</td>
<td>45dB gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10kHz...20GHz</td>
<td>-</td>
</tr>
<tr>
<td>HF-20</td>
<td>100MHz...20GHz</td>
<td>100MHz...20GHz</td>
<td>45dB gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100MHz...20GHz</td>
<td>-</td>
</tr>
<tr>
<td>HF-20V</td>
<td>10kHz...2GHz</td>
<td>3kHz...18GHz</td>
<td>30dB gain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3kHz...18GHz</td>
<td>-</td>
</tr>
<tr>
<td>HF-40</td>
<td>20kHz...40GHz</td>
<td>100MHz...40GHz</td>
<td>48dB gain</td>
</tr>
</tbody>
</table>

*All eoSense instrument integrates a unique channel in standard. 2 or 3 channels in total may be also be proposed in standard. Additional features may be possible during an eoSense upgrade. Special versions may be proposed. Please contact kapteos for more information.

As part of its on-going product improvement, Kapteos reserves the right to modify the characteristics of the products described in this document where the provided information are not-contractual. For further details please contact K apteos.
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1 AMP = AMPlifier to increase the signal in case of very low electric field measurement (from 45 to 55dB depending on eoSense version)

2 eoAcq = ACQuisition system to record the measured electric field. This option in under development.

### Main specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>≈ 9 kg (for 1 channel version without AMP)</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>+15 ... +30 °C (59 ... 86 °F)</td>
</tr>
<tr>
<td>Relative humidity</td>
<td>≤ 95 % without condensation</td>
</tr>
<tr>
<td>Power supply</td>
<td>100 ... 250 V AC – 50 or 60 Hz – 150 W max.</td>
</tr>
</tbody>
</table>

#### Front panel I/O

- eoProbe connector: ruggedized UTS-LC (1/ch)
- Signal output: 50Ω analog (1/ch)
  - BNC type: LF and MF versions
  - SMA type: HF-10 version
  - 3.5mm type: HF-20 version
  - K female type: HF-40 version
- Antenna factor correction: BNC type (1/ch)
- 1 x LED status
- 1 x Laser on/off key

#### Rear panel I/O

- 1 x USB 2.0 port
- 1 x Ethernet port
- 1 x Laser interlock adaptor (BNC type connector)
- 1 x ground screw
- 1 x Auxiliary female port (not used)

*Values are valid under certain conditions

### Content of instrument

- 1 calibrated instrument
- 1 Laser on/off key
- 1 Laser interlock adaptor
- 1 power cord
- 1 USB cable
- 1 software (Linux) installed
- 1 Notebook (Linux)
- 1 user manual
- 1 robust suitcase

### eoSense dimensions

- 283 mm (11.2 in)
- 410 mm (16.1 in)
- 179 mm (6.7 in)
Accessories

eoSwitch

Description
This accessory is an optical switch. It increases the number of probes connected (max. 48 probes) to the instrument.

Main specifications
- Number of input probes: 4, 8, 12, 16, 24, 32 or 48
- Number of output channels: 1 or 2 or 3
- Bandwidth of signal: 10 Hz ... 40 GHz
- Insertion losses: ≤ 3 dB
- Commutation time: 10 msec
- Number of commutations: > 100 000 000
- Power supply: Provided by eoSense instrument

This accessory is operated by the eoSense software.

eoSwitch dimensions

Fibre optic extension

Description:
The fibre optic extension is inserted between the eoSense instrument and an eoProbe sensor to increase the distance up to a maximum of 100 meters. The length is set with steps of 5 meters, from 5 to 95 meters. Each end of the optic fibre is connected with a ruggedized UTS-LC connector.
The sensitivity of the eoProbe may be reduced between 10 to 15%.

Reference: eoP-EXT

Services

Calibration
New calibration of eoSense instrument (with its eoProbe) is requested to be performed at Kapteos every 2 years.

Rental
Rental of an eoSense (with a minimum of one eoProbe) is based on a quote from Kapteos.
Standard rental period is from 1 week to 4 weeks.
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